Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~A~~ An isolated polynucleotide sequence comprising:

(a) a first nucleotide sequence comprising a sequence selected from the group consisting of:

(i) a nucleotide sequence encoding the p110 subunit of PI 3-kinase protein, and

(ii) a nucleotide sequence encoding a derivative or mutant of (a)(i) having ~~a~~ single or multiple nucleotide ~~substitution~~ substitutions, ~~deletion~~ deletions, or ~~addition~~ additions, said sequence encoding said derivative or mutant of (a)(i) having at least 50% identity to a native nucleotide sequence encoding p110, said derivative or mutant having 60-95% sequence identity to the native amino acid sequence of the p110 subunit of PI 3-kinase and an activity of the p110 subunit of PI 3-kinase protein~~,~~ ; and

(b) a second nucleotide sequence comprising a sequence encoding a cell membrane targeting sequence, said second nucleotide sequence being attached to the 5' or 3' end of said first nucleotide sequence.

2. (Currently Amended) ~~A~~ The isolated polynucleotide sequence of claim 1, wherein said first nucleotide sequence further comprises an additional sequence selected from the group consisting of:

(i) a nucleotide sequence encoding a portion of the p85 subunit of PI 3-kinase protein that is capable of binding the p110 subunit of PI 3-kinase protein, and

(ii) a nucleotide sequence encoding a derivative or mutant of (i) having ~~a~~ single or multiple nucleotide ~~substitution~~ substitutions, ~~deletion~~ deletions, or ~~addition~~ additions, said nucleotide sequence encoding said derivative or mutant of (i) having at least 80% nucleotide sequence identity to (i), said derivative or mutant being capable of binding the p110 subunit of PI 3-kinase.

3. (Currently Amended) ~~A~~ The isolated polynucleotide sequence of claim 2, wherein said additional nucleotide sequence comprises the iSH2 domain of the p85 subunit of PI 3-kinase protein.

4. (Currently Amended) ~~A~~ The isolated polynucleotide sequence of claim 1 wherein said cell membrane targeting sequence is selected from the group consisting of

(a) a myristoylation cell membrane targeting sequence~~,~~ ; and

(b) farnesylation and palmitoylation cell membrane targeting sequences.

5. (Currently Amended) ~~A~~ The isolated polynucleotide sequence of claim 3, wherein said first nucleotide sequence comprises a nucleotide sequence encoding p110* and said second nucleotide sequence comprises a nucleotide sequence encoding a cell membrane targeting sequence selected from the group consisting of:

(a) a myristoylation sequence; and

(b) farnesylation and palmitoylation sequences.

6. (Currently Amended) ~~A~~ An isolated polynucleotide sequence comprising:

(a) a first nucleotide sequence comprising a sequence selected from the group consisting of:

(i) a nucleotide sequence encoding the p110 subunit of ~~PI3~~ PI 3- kinase protein, and

(ii) a nucleotide sequence encoding a derivative or mutant of (a)(i) having single or multiple nucleotide substitutions, deletions, or additions, said nucleotide sequence encoding a derivative or mutant of (a)(i) having at least 50% identity to a native nucleotide sequence encoding p110, said derivative or mutant having 60-95% sequence identity to the native amino acid sequence of the p110 subunit of PI 3-kinase and an activity of the p110 subunit of PI 3-kinase protein; ~~,~~

(b) a second nucleotide sequence comprising a sequence selected from the group consisting of:

(i) a nucleotide sequence encoding the iSH2 domain of the p85 subunit of ~~PI3~~ PI 3-kinase protein that is capable of binding the p110 subunit of PI 3-kinase protein, and

(ii) a nucleotide sequence encoding a derivative or mutant of (b)(i) having ~~a~~ single or multiple nucleotide ~~substitution~~ substitutions, ~~deletion~~ deletions, or ~~addition~~ additions, said nucleotide sequence encoding a derivative or mutant of (b)(i) having at least 80% nucleotide sequence identity to (b)(i), said derivative or mutant being capable of binding the p110 subunit of PI 3-kinase protein, wherein said second nucleotide sequence is attached to a linker nucleotide sequence encoding a linker, said linker nucleotide sequence being attached to the 5' end of said first nucleotide sequence and forming a first fusion sequence~~,~~ ; and

(c) a third nucleotide sequence encoding a cell membrane targeting sequence, attached to the 5' or 3' end of said first fusion sequence.

7. (Currently Amended) The isolated ~~A~~ polynucleotide sequence of claim 6 wherein said cell membrane targeting sequence comprises a sequence selected from the group consisting of:

(a) a myristoylation cell membrane targeting sequence; and

(b) farnesylation and palmitoylation cell membrane targeting sequences.

8. (Currently Amended) ~~A~~ An isolated cell transformed with said polynucleotide sequence of claim 1.

9. (Currently Amended) ~~A~~ An isolated cell transformed with said polynucleotide sequence of claim 6.

10. (Withdrawn) A transgenic fly comprising a transgene having a polynucleotide sequence of claim 6 under regulatory control of an eye specific promoter, wherein said fly exhibits a phenotypic change in eye morphology from normal to rough eye morphology.

11. (Withdrawn) A method of screening for an inhibitor of PI 3-kinase comprising:

(a) administering a candidate inhibitor to a transgenic fly of claim 10,

(b) observing any reversion in phenotype to normal eye morphology in said fly, said reversion being indicative of PI 3-kinase inhibitor activity.

12. (Withdrawn) A method of reducing cell death due to trauma, comprising administering to a mammalian patient a viral or non-viral vector comprising a polynucleotide sequence of claim 1.

13. (Withdrawn) A method of reducing cell death due to trauma, comprising administering to a mammalian patient a viral or non-viral vector comprising a polynucleotide sequence of claim 6.

14. (Withdrawn) A method of making a 3' phosphorylated inositol phospholipid comprising: (a) contacting a purified p110 or p110* polypeptide with a vesicle including a PI 3kinase substrate selected from the group consisting of phosphatidylinositol (PI), phosphatidyl 4phosphate (PI4P) and phosphatidylinositol 4,5 bisphosphate (PI4,5,P.sub.2), and

(b) isolating a 3' phosphorylated inositol phospholipid.

15. (Withdrawn) A method of making a 3' phosphorylated inositol phospholipid comprising transforming a host cell with said polynucleotide of claim 1 and expressing said polynucleotide.

16. (Withdrawn) A method of making a 3' phosphorylated inositol phospholipid comprising transforming a host cell with said polynucleotide of claim 6 and expressing said polynucleotide.

17. (Withdrawn) A 3' phosphorylated inositol phospholipid made by the method of claim 14.

18. (Withdrawn) A 3' phosphorylated inositol phospholipid made by the method of claim 16.

19. (Withdrawn) A method of activating an enzyme effector of PI 3-kinase having a pleckstrin homology domain comprising:

(a) incubating a polynucleotide sequence of claim 1 with a 4' phosphorylated phosphatidylinositol selected from the group consisting of phosphatidylinositol 4 phosphate (PI4P) and phosphatidylinositol 4,5 bisphosphate (PI4,5P.sub.2,) to generate a mixture of 3'

phosphorylated inositol phospholipids comprising phosphatidylinositol 3,4 bisphosphate (PI3,4P.sub.2,), and phosphatidylinositol 3,4,5 trisphosphate (PI3,4,5P.sub.3,),

(b) isolating a 3' phosphorylated inositol phospholipid of (a) and

(c) contacting an active polypeptide having a pleckstrin homology domain with an effective amount of said isolated 3' phosphorylated inositol phospholipid of (b).

20. (Withdrawn) A method of promoting activation in a mammalian patient of an insulin signaling pathway comprising contacting a cell characterized by insulin resistance with a vector comprising a polynucleotide sequence of claim 6.

21. (Withdrawn) A method of reducing cell death associated with trauma in a mammalian patient, comprising contacting a population of said patient's cells with an effective amount of a pharmaceutical composition comprising a 3' phosphorylated inositol phospholipid of claim 18.